Personal Information

DOB: 09 Jul 1986
Email: sfraser2008@gmail.com
Web pages: FABI Profile Research Gate Profile Google Scholar Profile Twitter Profile

Profile

- Forest pathology Postdoctoral Fellow at the University of Pretoria focused on the biology and epidemiology of wattle rust
- Completed a PhD at the University of Aberdeen in 2015 on the susceptibility of different pine species to dothistroma needle blight
- Experienced in:
    - Plant and forest pathology
    - Fungal biology
    - Disease ecology
    - Host-pathogen interactions
    - Experimental design and statistical analysis
- Awards:
    - 2015 Scottish Woodlands Ltd Student Excellence Award
    - 2015 BSPP Best Student Paper Prize for *Plant Pathology*

Education

2011-2015	**University of Aberdeen** (UK)	PhD	Forestry
2008-2009	**Imperial College London** (UK)	MSc	Conservation and Forest Protection
2005-2008	**University of Sheffield** (UK)	BSc	Ecology

Employment

University of Pretoria, South Africa, Postdoctoral Fellow, Aug 2015 – present

- Forestry and Agriculture Biotechnology Institute (FABI)
- Department of Plant and Soil Sciences

My role:

- Investigation of the biology and epidemiology of wattle rust on *Acacia mearnsii*, caused by *Uromycladium acaciae*
- Supervision of Undergraduate and Masters students
- Lab manager

Research topics:

- Elucidate the infection biology and life cycle of *U. acaciae*
- Develop an artificial inoculation protocol for resistance screening of *A. mearnsii*
- Investigate disease epidemiology using spore traps and field monitoring
- Develop molecular markers for a population study of *U. acaiae*
- Review geographic distribution, host range and management of dothistroma needle blight

Funding:

- January 2016: GRI (Genome Research Institute) Project Seed-Funding to sequence the genome of *U. acaciae*; R50,000

Forest Research, Alice Holt, Farnham, UK, Research Assistant, Feb 2015 – May 2015

- Design and execution of fungicide efficacy experiments against dothistroma needle blight of pine
- Maintenance of fungal culture collections
- Production of an internal report on the genetic modification of trees

University of Aberdeen, UK, PhD student, Sep 2011 – Mar 2015

- Thesis title: Inter- and intra-specific variation in susceptibility to dothistroma needle blight within pine species used in British forestry
- Funding: Scottish Forestry Trust/Forestry Commission Joint Bursary Award Scheme and Forest Enterprise Scotland
- PhD submitted March 2015 and conferred August 2015
- Collaborative project between the University of Aberdeen and Forest Research.

Experience of:

- General mycology and microbiology
- Plant and forest pathology
- Disease ecology
- Population biology
- Chemical ecology
- Experimental design and statistical analysis
- Successful domestic and international collaboration
- Communication with various stakeholders
- Lecturing of Honours and Masters students on *The biology and ecology of forest health*

Outcomes:

- Four first-author and two co-authored original research papers
- A review of defence mechanisms involved in the *Pinus-Dothistroma* interaction
- Presentations and posters at several University of Aberdeen, IUFRO and DIAROD meetings
- Formal stakeholder and community extension included:
    - Presentations at Highlands and Islands Regional Forestry Forum meetings
    - A book chapter on invasive pathogens in *A Handbook of Scotland's Trees*
    - An article on dothistroma needle blight of pine in *Forestry Journal*
- Awards:
    - 2015 Scottish Woodlands Ltd Student Excellence Award for my thesis
    - 2015 BSPP Best Student Paper Prize for *Plant Pathology*.

Natural History Museum, London, UK, Visitor Services Assistant, May 2010 – Sep 2011

- Working on the information and ticket desks I communicated the museum's public offer to visitors

Kimberley Specialists, Kununurra, Australia, Volunteer Research Assistant, Jan 2010 – Feb 2015

- Disease ecology at the invasion front of the damaging cane toad in Western Australia
- Field collections of toads, dissections and assessment of parasite presence and abundance
- Vertebrate surveys

University of Melbourne, Australia, Research Intern, May 2009 – Sep 2009

- To produce my Masters Dissertation (Imperial College London)
- Local adaptation within the widespread tree species, *Eucalyptus obliqua*, and its implications for this species under future climate change
- Results from this project helped refine of the Tree And Climate Assessment Model (TACA), used to predict the potential impact of climate change on tree regeneration in Victoria

Awards

- January 2016: 2015 Scottish Woodlands Ltd Student Excellence Award
- August 2015: BSPP (British Society for Plant Pathology) Best Student Paper Prize for *Plant Pathology* for "Intraspecific variation in susceptibility to dothistroma needle blight within native Scottish *Pinus sylvestris*" Vol. 64: 864-870
- June 2015: University of Aberdeen Principal's Excellence Grant to attend Joint IUFRO 7.02.02 "Foliage, shoot and stem diseases of forest trees" and 7.03.04 "Diseases and insects in forest nurseries" Working Parties Meeting; Uppsala, Sweden; 7–12 June 2015; £200
- May 2014: COST Action FP1102 (DIAROD; Determining invasiveness and risk of Dothistroma) Short Term Scientific Mission grant for a research visit to Istituto di Bioscienze e Biorisorse, Florence, Italy; €1400

Professional memberships

- 2014-present: member of the British Society for Plant Pathology (BSPP)
- 2012-2015: member of the COST (Cooperation in Science and Technology) Action FP1102 DIAROD (Determining invasiveness and risk of Dothistroma)

Publications

Journal articles

Alenezi F, **Fraser S**, Belka M, Doğmus-Lehtijärvi HT, Oskay F, Hečková Z, Belbahri L, Woodward S, 2016. Biological control of Dothistroma needle blight on pine with *Aneurinibacillus migulanus. Forest Pathology*. DOI: 10.1111/efp.12237

Bulman LS, Bradshaw RE, **Fraser S**, Martín-García J, Barnes I… Tubby K, 2016. A worldwide perspective on the management and control of Dothistroma needle blight. *Forest Pathology*. DOI: 10.1111/efp.12305

Drenkhan R*, Tomešová-Haataja V*, **Fraser S***, Bradshaw RE*, Vahalík P*, Mullett MS*, Martín-García J*, Bulman LS*, Wingfield MJ… Barnes I*, 2016. Global geographic distribution and host range of *Dothistroma* species: a comprehensive review. *Forest Pathology*. DOI: 10.1111/efp.12290

Fraser S, Martin-Garcia J, Perry A, Kabir MS, Owen T, Solla A, Brown AV, Bulman L, Barnes I, Hale MD, Vasconcelos MW, Lewis K, Doğmuş-Lehtijarvi HT, Markovskaja S, Woodward S, Bradshaw RE, 2016. A review of Pinaceae resistance mechanisms against needle and shoot pathogens with a focus on the *Dothistroma-Pinus* interaction. *Forest Pathology.* DOI: 10.1111/efp.12201

Fraser S, Mullett M, Woodward S, Brown AV, 2016. Between-site and-year variation in the relative susceptibility of native Scottish *Pinus sylvestris* populations to dothistroma needle blight. *Plant Pathology*, 65: 369–379. DOI: 10.1111/ppa.12425

Fraser S, Weitz H, Brown AV, Woodward S, 2016. Storage of *Dothistroma septosporum* cultures. *Forest Pathology.* DOI: 10.1111/efp.12189

Fraser S, Woodward S, Brown AV, 2016. Inter- and intra-specific variation in susceptibility to dothistroma needle blight in Britain. How susceptible are *Pinus sylvestris* and *Pinus contorta*? *Forest Pathology*. DOI: 10.1111/efp.12217

Fraser S, Brown AV, Woodward S, 2015. Intraspecific variation in susceptibility to dothistroma needle blight within native Scottish *Pinus sylvestris*. *Plant Pathology*, 64: 864-870. DOI: 10.1111/ppa.12320

Markovskaja S, Kačergius A, Davydenko K, **Fraser S**, 2016. First record of *Neocatenulostroma germanicum* on pines in Lithuania and Ukraine and its co-occurrence with *Dothistroma* spp. and other pathogens. *Forest Pathology*. DOI: 10.1111/efp.12308

Moykkynen T, **Fraser S**, Woodward S, Brown A, Pukkala T, in press. Modelling the spread of Dothistroma needle blight (*Dothistroma septosporum*) in Europe. *Forest Pathology*.

Mullett MS, **Fraser S**, 2016. Infection of *Cedrus* species by *Dothistroma septosporum*. *Forest Pathology*. DOI: 10.1111/efp.12214

Mullett MS, Brown AV, **Fraser S**, Baden R, Tubby KV, in press. Insights into the pathways of spread and potential origins of *Dothistroma septosporum* in Britain. *Fungal Ecology*.

Book chapters and popular scientific articles

Fraser S, Brown A, Woodward S**,** 2015. The threat of dothistroma needle blight to pine forestry in Britain. *Forestry Journal* 1: 15, 26-27.

Fraser S, Woodward S, 2014. Invasive alien pests and pathogens. pp. 52 – 58, in *A Handbook of Scotland's Trees*. F. Martynoga (ed.). Reforesting Scotland. Sangan Publishers, Glasgow, UK.

Protocols

Bradshaw RE, Kabir MS, **Fraser S**, 2014. Dothistroma needle blight challenge procedure. pp. 22 – 25, in *Dothistroma, isolation and molecular identification methods*. MS Mullett & I. Barnes. Forest Research, UK. http://www.forestry.gov.uk/pdf/FR_DIAROD_DothistromaProtocolsNovember2014.pdf/$FILE/FR_DI AROD_DothistromaProtocolsNovember2014.pdf

*Joint first authors

Presentations

ICFR (Institute for Commercial Forestry Research) Central Regional Interest Group Field Day,
Paulpietersburg, South Africa, 25 Oct 2016
Presentation: "The biology and epidemiology of *Uromycladium acaciae*"

27th Annual TPCP (Tree Protection Co-operative Programme) Symposium,
Pretoria, South Africa, 17 – 18 May 2016
Presentation: "Progress in understanding the biology of the Acacia rust pathogen *Uromycladium acaciae*"

IUFRO (International Union of Forestry Research Organisations) Joint IUFRO 7.02.02 "Foliage, shoot and stem diseases of forest trees" and 7.03.04 "Diseases and insects in forest nurseries" Working Parties Meeting,
Uppsala, Sweden, 7 – 12 Jun 2015
Presentation: “Inter- and intra-specific variation in susceptibility to dothistroma needle blight in Britain. How susceptible are *Pinus sylvestris* and *Pinus contorta*?”

Highlands and Islands Regional Forestry Forum,
Inverness, UK, 3 Dec 2014
Presentation: “The relative susceptibility of Scots pine to dothistroma needle blight”

IUFRO World Congress,
Salt Lake City, Utah, 5 – 11 Oct 2014
Poster: “Variation in susceptibility of native Scottish Scots pine populations to infection by *Dothistroma septosporum*”

DIAROD (Determining invasiveness and risk of Dothistroma) Annual Meeting,
Antalya, Turkey, 29 Apr – 1 May 2014
Presented: “Inter- and intra-specific variation in susceptibility to dothistroma needle blight: how susceptible is *Pinus sylvestris*”

IBES (Institute of Biological and Environmental Sciences) Postgraduate Student Symposium,
University of Aberdeen, Scotland, 3 – 4 Apr 2014
Chaired the opening session.
Presented: “Between-population variation in susceptibility to dothistroma needle blight within native *Scots pine*”

DIAROD Working Group Three Meeting,
Wageningen, Netherlands, 13 Sep 2013
Presented: “Intra-specific variation in susceptibility to dothistroma needle blight within Scottish *Pinus sylvestris*”

Joint DIAROD Annual Meeting and IUFRO 7.02.02 "Foliage, shoot and stem diseases of forest trees" Working Party Meeting,
Mendel University, Czech Republic, 23 – 24 May 2013
Poster “Inter- and intra-specific variation in susceptibility to dothistroma needle blight”

IBES Research day,
University of Aberdeen, Scotland, 7 Dec 2012
Poster: “Provenance variation in susceptibility to dothistroma needle blight within Scots and lodgepole pine”

Highlands and Islands Regional Forestry Forum,
Dingwall, UK, 6 Dec 2012
Presentation: “Dothistroma needle blight”

DIAROD Annual Meeting,
University of Aberdeen, Scotland, 6 – 9 Aug 2012
Presented: “Inter- and intra-specific variation in susceptibility to dothistroma needle blight”

Referees

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